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GROUND CONTROL INTERCEPT SERVICE IN THE USSRKrasnaya Zvezda  
Moscow, 2 Jul 1954Col A. Borovykh  
Twice Hero, of the  
Soviet Union

Not far from our command post, the antenna of a powerful radar turns. It sends out electromagnetic waves for many kilometers from the airfield. Reflecting off an airplane in the air, the waves return to earth. Converted into light energy, the impulses become visible on the screen before which an operator sits. In this manner, no aerial target appearing in the zone of action of the radar, day or night, escapes detection.

"Airplane!" the operator reports to the senior commander just as soon as a target appears on his screen.

The speed of the aerial target and its direction of flight are immediately determined, and suitable calculations are made. On the basis of these calculations, and after a thorough consideration of meteorological and air conditions, the commander decides to intercept the target. He arranges further close observation of it, sends airplanes into the air, and directs the actions of the pilots.

In carrying out these tasks, the fliers and troops of the GCI (Ground Controlled Intercept) Service (Sluzhba Navedeniya) are aided by the combat experience gained during the Great Patriotic War. Guarding our cities, villages, and industrial and military installations against the air raids of an enemy, we learned the art of intercepting and destroying enemy planes.

No matter what cunning the fascists used, whether they tried to steal up on our installations first at high altitudes, then at low altitudes, day or night, or whether they used various formations and came from differing directions, it made no difference, for the Soviet fliers, with the help of the troops of the GCI Service, guessed the enemy's plans, flew out on intercepts, and with accurate fire destroyed the enemy planes well away from the targets.

Possessing great combat experience in intercepting and attacking enemy planes, we must take from this experience that which is most valuable and must critically examine this experience in the light of recent achievements of Soviet military science and technology. This will permit us to increase the combat readiness of fighter aviation still more.

Displaying a ceaseless concern for the strengthening of the defense capability of our state and for the might of the Soviet Army and Navy, the Communist Party and the Soviet government equip our air force with modern jet planes, radar, and other materiel, and pay constant attention to the training and education of flight cadres. Our fliers persistently study methods of combat with enemy planes. They strive to master their equipment so that, if necessary, they will be able to detect quickly and destroy the enemy.

The pilots are aided in intercepting aerial targets by the soldiers, sergeants, and officers who carry out their duties at aerial observation posts (posty vozdushnogo nablyudeniya), GCI points (punkty navedeniya), and radio-technical stations (radiotekhnicheskiye stantsii). The successful fulfillment of the combat or training mission depends, to a great extent, on the skill of these troops and on their coordination of action.

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The crew of one of these GCI points carries out its duties with a feeling of great responsibility for the defense of the Motherland. The soldiers, sergeants, and officers have mastered the complicated radar equipment which has been entrusted to them, and are able to use it well. The conscious discipline of the troops of the GCI Service, and the vigilance which they display in carrying out their service obligations, in combination with the excellent knowledge of their affairs, enable the crew to be a model in its work.

Coming on duty, operator Pfc Korolev quickly picked up a flying airplane on the screen of the radar, and began to track the target. Officer Andreyev, acting as duty navigator (dezhurnyy shтурман), determined that the target was moving in our direction. For the experienced specialist it was only a matter of one minute to make the preliminary calculation for the dispatch of fighter planes over the shortest distance to the spot designated for the intercept.

A jet fighter, piloted by a first-class flier, Captain Sazonov, climbed into the night sky. He had the course data, altitude, and time of arrival at the intercept spot. The flier carried out the flight procedure accurately: course, speed, angle of climb. On the radar screen and on the GCI map (karta navedeniya) the approach of the fighter to the target was clearly visible. Officer Andreyev confidently directed the plane to a previously selected spot. Then he gave the pilot one more command over the radio: "Right turn to a course of 40 degrees."

Knowing how much time it takes to make a turn at a given speed and angle of bank, Andreyev reckoned that Captain Sazonov was now behind the target and could attack it with a favorable line of sight. The situation was very favorable.

But then the unexpected happened. When the fighter was making the turn, the "enemy" changed course and descended several hundred meters. The aerial target was temporarily lost.

However, this first mishap did not confuse either duty navigator Andreyev, who was doing the controlling, or flier Sazonov. The search for the target continued. After a report from the flier on the situation in the air, Andreyev tried to direct the fighter plane so that the target, now on the clouds, would be projected on the horizon, and would be illuminated by moonlight. When it could be clearly seen on the map and radar screen that the lines of flight of the fighter plane and the target would intersect exactly, Sazonov was told over the radio: "The target is before you."

"I see it, and am attacking!" Captain Sazonov answered immediately.

We could give other suitable examples of interception of aerial targets at high and low altitudes, during the day and at night, and under adverse conditions. But, no one's head should be turned by the successes we have achieved. There are still many shortcomings in the work of the crews of command posts and of aviation commanders which make it difficult and complicated for flier to intercept aerial targets.

In particular, much depends on the degree of knowledge of the operator. His duties involve great responsibility. Essentially, he carries the basic load in connection with the search for the aerial target and for directing the fighter to it. Naturally, all of this demands great mastery on the part of the operator. A well-trained specialist is able to locate with one glance at the screen all of the planes flying in the zone of action of the radar and to give their positions. Fixed habits in working with the apparatus permit the operator to track the target steadily.

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Pfc Korolev's work has earned praise. Despite the fact that he worked at an old-style radio-technical station, Korolev spotted all the targets which appeared, accurately determined their location and altitude, and clearly saw where our airplanes were located. In his actions there is always the feeling of sureness which usually comes to a soldier who has mastered his duties.

Once another operator worked alongside Korolev. However, because of his inaptitude with the equipment, he did not succeed in doing one half of the work that Korolev did. This fact shows that the operator who possesses good habits and who is able to utilize the achievements of technology to the very end works much more productively than one who lacks these traits.

The troops of the GCI Service who carry out their duties with radar must constantly perfect their habits and study their equipment. The operator must be well-acquainted with aviation tactics and must know the tactical and technical data for many types of planes, so that while on duty he will not work "blindly," but will clearly know how the problems of intercepting aerial targets are solved.

Sometimes it happens that in haste, or panic, because he does not consider it necessary, the commander or navigator does not inform the operator to the existing situation. As a result, the operator does not have all the data on the aerial target and has a confused idea of the over-all task, which makes his work more difficult. The opposite is also true, because an operator who knows all the tactical and technical data for all airplanes, who is well-versed in the tactics of aerial battle, and who understands the plans of the service commander is many times more helpful to the successful accomplishment of the mission.

In "Y" Aviation Unit (chast'), officer Ilyostikov often performs the duties of an operator. Having studied radar and the rules for its operation well, he often displays a healthy initiative. This officer never "loses" a target. He always knows where it is, what his airplanes are doing, how many of them are in the air, and what has been assigned to each of them.

Officer Ilyostikov, possessing great GCI experience, often helps the duty navigator determine at which moment it is best to deploy the fighters against the target. Aware of the importance of establishing the point for assigning targets (razume razmesheniya tsel'ey) and the altitude at which they are located, the operator carefully controls his actions and tries to give the duty navigator the maximum of accurate information.

The duty navigator must carry out his duties with the feeling of highest responsibility. To do this he must have an excellent knowledge of his specialty and must possess a broad tactical outlook. This permits the navigator to prepare for the commander the plan for a correct location, based on an evaluation of the situation from every angle and on accurate calculations. Not only minutes, but seconds as well must be taken into consideration in these calculations, as the speed and altitude of the aerial target must be determined with reasonable accuracy. Otherwise, there will be inevitable mistakes fraught with serious consequences.

The sphere of action of the duty navigator at the GCI point is not limited to the preparation of preliminary calculations. He must at all times follow the situation in the air, exactly define the position, flight speed, and altitude of the targets, and must always know the situation of his fighters, taking note of the time of their taking off and landing, etc. The many-sided work with which the duty navigator of the GCI point is charged demands from him great accuracy, conscientiousness of action, extreme punctuality, and attention to detail. Any breach of these principles leads to mistakes.

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Once, while officer Stanoga was serving as duty navigator, he made a mistake in his very first calculation. Our planes were sent aloft from their airfield one minute too late, and were late arriving at the spot chosen for the intercept of the aerial target. Correcting his mistake, the navigator demanded that the fliers increase their speed of flight. He was so carried away with getting the fighters to the intercept point (rubezh vstrechi) that he made his second mistake: he stopped following the aerial target and deployed the fighters earlier than he should have.

In directing our airplanes to the enemy, literally all the elements on which the intercept of an aerial target depends must be taken into consideration. If only one mistake occurs, the entire complicated work of the command post and the flier goes for naught. An example of this is an event which took place during the Great Patriotic War. At night, a pair of fighters sent up from an airfield located near us followed an aerial target, flying almost next to it. However, we did not know this at our command post and the commander and duty navigator sent their planes into the air to intercept the target.

At the same time, the neighboring fighters separated from the aerial target and two spots appeared on the radar screen. The operator was not able to determine which was the target and which was his own planes. That was what lack of coordination with the neighboring units and slipshod work on the part of directing troops led to.

Indeed, harmony in the work of the crew of the command post has invaluable significance. Such harmony must be based on every man having an outstanding knowledge of his specialty, on the firm military discipline of personnel, and on the ability to display initiative at the proper time. Once, because of only partially accurate actions, the operator lost the target. But the duty navigator knew what had to be done. He continued to track (vesti) the target for the computed time, used a course-and-bearing indicator (pelengator) and the reports of other posts, and told the operator in what sector he should look for the target. Such harmony and mutual assistance leads, in the end, to the interception of the target.

Modern radar equipment permits the accurate directing of the fighters to any aerial targets. Learning to master this equipment skillfully, and to use it well, is a matter of honor for and the duty of the troops who perform GCI work and carry out their duties in combat coordination with fliers.

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